USER MANUAL

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Warning

ATTENTION-refer to manual

Danger-High voltage

Protective ground (earth) terminal

Input Power max 100mW of the AT11801 Power Sensor (probe)

GENERAL INFORMATION

Introduction

AT437C is a cost high performance microwave power meter for microwave power measurement. It can measure the frequency range from 10MHz to 18GHz (AT11802). It can measure power levels 0.1uW～100mW. It's a portable design keeping in mind the bench and field service application AT437C power indicator from its power sensors and components.

The high performance and accuracy is obtained by the Power Sensor by chopper and by the linear correction circuit components. Chopper is using high-sensitivity, low-noise MOS-FET switch components Series chopper. Its main role is to transform the probe by the power of DC input signal modulation signal into equivalent exchanges, and through the CPU to carry out the processing.

Microwave power meter have preamplifier as the high-gain transistor and the high-impedance Low-barrier comprising operational amplifier with a gain amplifier exchanges about 600 hybrid amplifiers.

SYSTEM SPECIFICATIONS

Frequency Range	:	10MHz～18 GHz
Power Range	:	0.1uW～100mW
Readout accuracy	:	DATA±8%
VSWR	:	≤1.25
Power Reference	:	50MHz 1.00mW±1.5%
Display Resolution	:	0.01 dB
Recorder output	:	0～1Voltage，output Impedance 1KΩ。
Display	:	W, dBm, dB。
Line Voltage Range	:	220VAC±10%，50Hz～60Hz， 10W
Size	:	260mm（L）×250mm（W）×110mm（H）
Weight	:	about 3.7 Kg。

USER METHODS

3.1 NOTICE

- Power Voltage: The Input Power supply should not be more than 220 VAC ±10%, otherwise no guarantee of equipment on burnt equipment due to overload.
- Operating Environment: The specifications stating tolerances are only valid if the instrument has warmed up for 30 minutes at ambient temperature between +15℃ (+59ºF) and +30℃ (+86ºF). Values without tolerances are typical for an average instrument.
- Before Zeroing: The sensor should access ports "SENSOR" ,set sources off to ZERO operate, then open 1 mW, 50 MHz reference source for the calibration .
- At exactitude measure, it should to process frequency settings

3.2 OPERATE METHOD

3.2.1. MODE key

There are three ways in the Power Meter for the power measurement (W, dBm and dB).

When dB to be shown, is the first measurement X_0 (absolute power) as a reference on the number of forms 10Lg (X_n/X_0), by entering key to refresh reference value (0.00 dB).

By MODE Key the button switch means dBm, dB display.

By ENTER Key the button switch means dBm, Watt display.

3.2.2. SET key

The Setting key is for microwave frequencies measured, in order to correctly reflect the process of measuring the measured object situation.

a. Frequency settings: This is done by setting the display window button to show "FΓ- XX", the access frequency settings.

Frequency setting range: 0 to 18, 0 said that 50 MHz, while other figures GHz as a unit. By pressing the ▲ button (plus 1) and ▼ key (minus 1) to amend and adjust to the necessary requirements.

If the button settings and no follow-up operation, the machine will wait a few seconds later returned to the measurement state, when Zero and cal, Tuning frequency should be set to zero.

b. Attenuation settings: Continuous press set key by the display window display, "At - XX", enter the attenuation settings.

Settings range: 0 to 30 dB. By pressing the ▲ button (plus 1) and ▼ key (minus 1) to amend and adjust to the necessary requirements in order to achieve power compensation.

3.2.3. ZERO and CAL Key:

In the process of measuring equipment to ensure the accuracy of data often need to tune the instrument zero and calibration operation.

Press ZERO key, ZERO displayed on the display window, then wait for the machines in the state, and then press enter key to confirm the transfer, equipment operation, REM light at this time on, that has entered the zero state.

Need for continued operation of zero seconds, after the completion of transfer and operation of the state apparatus to measure, REM lights goes “OFF”. If the transfer is the key instrument in a wait state, wait for a few seconds after the follow-up operation to return to measuring the state apparatus.

Press CAL key, CAL displayed on the display window, CAL At this time in a wait state apparatus. Press Enter key to confirm calibration operation of the equipment, then REM light on, the state has entered calibration.

Calibration operational needs sustained seconds and correct operation after the completion of the state apparatus to measure, REM lights eliminate. If the calibration of the instrument in the key state of waiting, no follow-up operation for a few seconds after the return of measuring state apparatus.

By cal button, the instrument automatically open 50 MHz reference source to avoid apparatus for invalid operations. To allow accurate calibration operation, the proposed corrective action before entering the benchmark bond by the reference source and preheat to open more than 15 min.

NOTE: ZERO, CAL during REM lights must wait for the follow-up only after the eradication operation. At ZERO References source should be closed to ensure that no power input sensor.

3.2.4. STORE and RECALL:

Instrument retained the 10 registers (0-9) for the users, up to 10 user defined set of measurements and data preservation, and when necessary to facilitate the transfer and use it every time, before a measurement Series set up operations.

Deposited by Bond, displayed on the display window "SAVE N" (N = 0 - 9), then wait for the machines in the state. By selecting the ▲ button (plus 1) or ▼ key (minus 1) to select N, the press the enter button, the current measurement equipment will be installed and kept in the state-N and stored for the future to use. I can be recalled by adopting the CALL N its transfer.

When displayed on the display window "SAVE N", in a wait state apparatus, such as follow-up operation without waiting for a few seconds after returning to withdraw from the storage operations measurement state.

By transfer button to press RECALL, the display window displayed on the "CALL N" (N = 0-9), then wait for the machines in the state. By selecting the ▲ button (plus 1) or ▼ key (minus 1) to select N. If by then enter button, send equipment will be kept in storage in the N-measurement and data transfer as a set of measurements and the current settings.

When displayed on the display window "CALL N", apparatus, in a wait state, such as follow-up operation without waiting for a few seconds after the withdrawal operation out of state and return to the measurement.

3.2.5. ENTER key

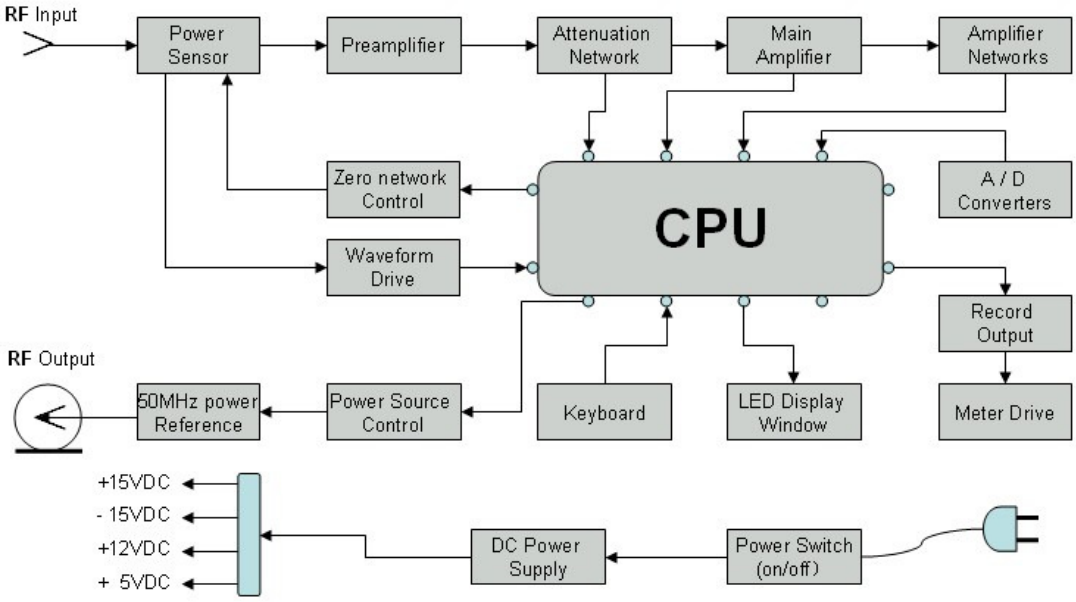
Enter key is a mixed function keys. In the frequency or attenuation settings, to set confirm a role. in the calibration or zero, to confirm operation . in the save or recall, also to confirm operation. in the power measurement, it played the implementation of Watt dBm display mode switch. When dB measured in the way also played into the refresh button reference value (0.00 dB) role.

NOTE: zero before switching to enter the bond Watt, showed that only 0.0 X.

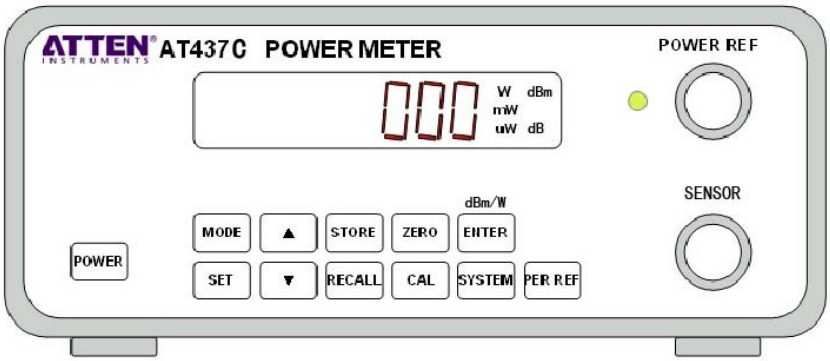
3.2.6. SYSTEM key:

Implementation of the "remote control" system function key role. "Remote Control" status through this button to go back to "local." If no RS232 interface configuration options, the system keys are vacant.

LOGIC DIAGRAM



MAIN PANEL (FRONT VIEW)



TROUBLESHOOTING

SN	Fault display	Fault may be part	Removal Method
1	Not boot	Broken fuse	Replacement of fuses
		Power PCBA failure	Check input power PCBA and replacement of defective components
2	Monitor not normal LED display not shine	LED Broken	LED replacement
		Power cable with a sensor panel signal input port bad contact	Good sensor inserted connecting cables or replacement probe
3	Display Over	Data Overflow	Reduce the power source of power to appropriate
4	No reference output power Power errors	Reference vibration stops	Replacement Of defective reference source
		Reference power ultra-poor	Re-regulating power base, at normal temperature should be raised to 1 mW ± 1.5%

EQUIPMENT MAINTENANCE

Equipment should be regularly checked and found that fault timely repair.

Equipment should not increase canopies; the annex should be properly kept.

Equipment operation, keys should not be pressed with excessive force so as to avoid damage.

WARRANTY

All ATTEN products are warranted against defects in materials and workmanship for two years from the date of shipment. ATTEN's obligation covers repairing or replacing products which prove to be defective during the warranty period. Obligation is limited to the original purchaser. ATTEN is not liable for consequential damages.

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